

**— COMPLETED — NB**

Helitowcart - DESIGN CHANGE REQUEST-ORDER (ECR/ECO)	F20-01	Page 1 of 3
Reviewed & approved by: /		2006 09 09

### A- REQUEST

ECR : -

ECO : 1

Nature of proposed change :	CREATE NEW PAD WITHOUT POCKETS TO KEEP ROCKS FROM STAYING IN & THUS ELIMINATING RISK OF ROTOR DAMAGE
Reason :	REQUEST FROM HELI CAN. IT APPEARS THEY HAD A ROCK HIT A TAIL BLADE & CAUSE IS POSSIBLE ROCK FROM BEARPAW PAD.
Submitted By :	CLAUDE BOUCÉ, HELI CAN <span style="float:right">NATHALIE BARBEAU</span>
Date :	2008.01.15

### B- IMPACT ANALYSIS

Product Manager	MODIF TO PAD IS MEETING NEED & IS A + FOR SAFETY. Signature : N. Barbeau /date : 2008.01.15
Operation Manager	NB STOCKS LOW ON PREVIOUS MODEL: OK PLEASE KEEP PREVIOUS MODEL AVAILABLE/ACCEPTABLE FOR SERVICE Signature : N. Barbeau /date : 2008.01.15
Quality System Manager	2B NO PROBLEMS TAVON CHANGES TO CONTROL PLAN. Signature : N. Barbeau /date : 2008.03.15
Regulatory affairs Manager	HAVE CONSULTED TRANSP CAN REPRESENTATIVE. (M. Zgola) THIS MODIF IS MINOR. OK. Signature : N. Barbeau /date : 2008.01.15
Supplier A	N/A Signature : /date :
Supplier B	N/A Signature : /date :
Other	N/A Signature : /date :

Helitowcart - DESIGN CHANGE REQUEST-ORDER (ECR/ECO)	F20-01	Page 2 of 3
Reviewed & approved by: /		2006 09 09

### C- DECISION

Risk analysis	<p>• NEW MODEL WOULD REDUCE RISK OF ROCKS GETTING STUCK ON PAD POCKETS. ⇒ ↓ RISK OF ROTORTAIL DAMAGE.</p> <p>NOTE: PREVIOUS MODEL IS WIDELY USED IN THE INDUSTRY. IT IS STILL A VERY LOW RISK DESIGN &amp; POSSIBLE OCCURRENCE OF ROCKS ISSUE IS STILL VERY REMOTE SO CHANGE WOULD NOT INVOLVE PADS ALREADY ON THE MARKET.</p> <p>Signature: <u>N. Barton</u> /date: <u>08.01.15</u> NB</p>
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Decision	<p>• CREATE NEW PAD MODEL.</p> <p>• STILL ALLOW THE USE OF PREVIOUS PAD MODEL IN DOCUMENTATION.</p> <p>Signature: <u>N. Barton</u> /date: <u>08.01.15</u> NB</p>
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### D- ACTION PLAN

Action	Resp	Due date :	Verified by :
GET NEW DESIGN FROM MIRKO	NB	08.02.15	NB 08.03.12
GET NEW PADS	NB	08.02.28	NB 08.03.12
GET REVISED DOCUMENTATION	NB	08.03.05	NB 08.03.12
UPDATE Q.C. CONTROL PLAN	NB	08.03.12	NB 08.03.12
ISSUE NEW BEARINGS	NB	08.03.15	NB 08.03.13

Effective date : <u>2008.03.13</u>	Effective lot no : <u>+ 080312-01</u> <u>080211-01</u>
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Helitowcart - DESIGN CHANGE REQUEST-ORDER (ECR/ECO)	F20-01	Page 3 of 3
Reviewed & approved by: /		2006 09 09

### E- VERIFICATION

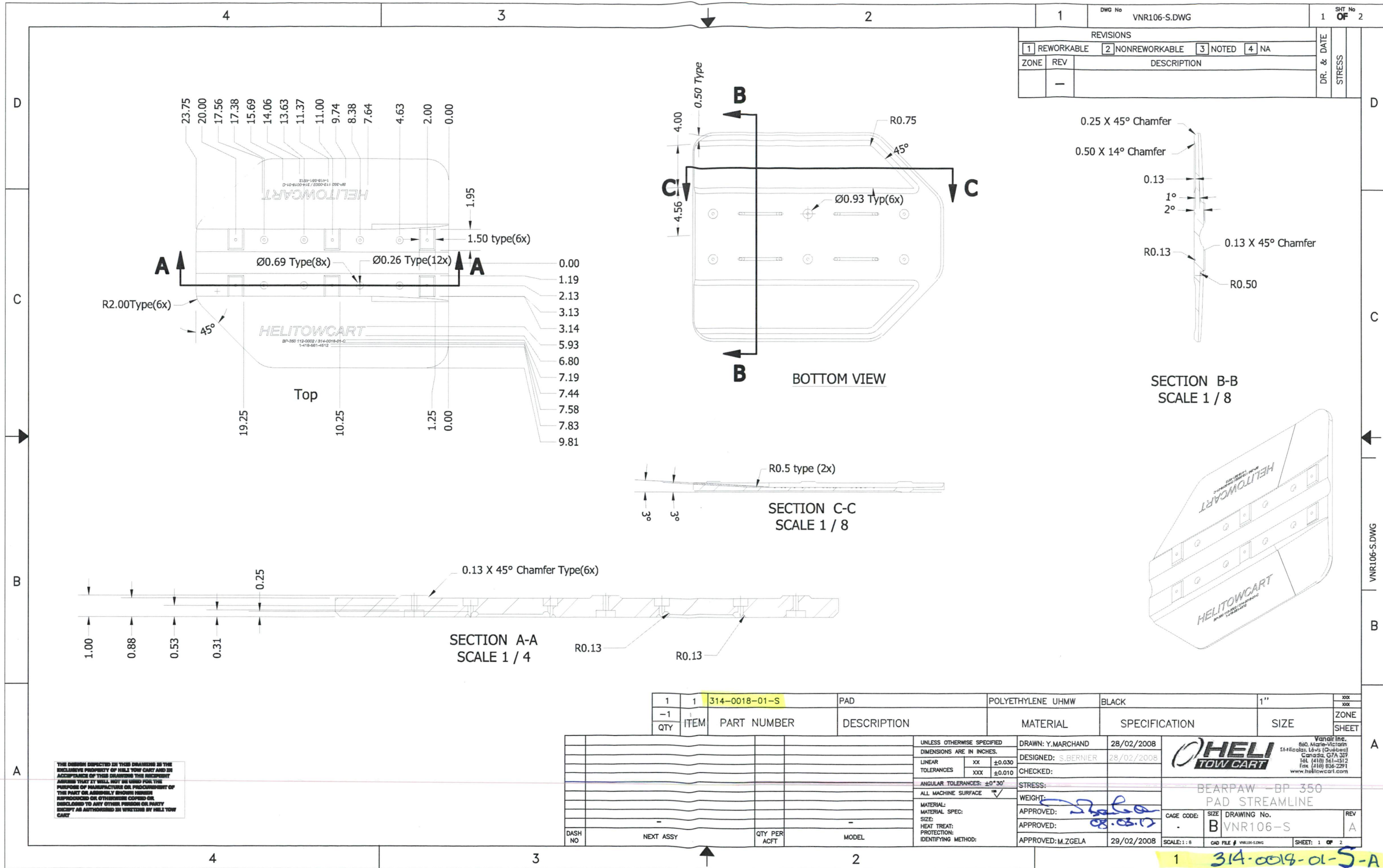
Verified Elements :	By/ date :
New Prod. approved + manufactured	
Product meets req't vs no reqs	
got caught + slight weight reduction	08.03.14
All documents + Records + New lots	NR
processed fully. SOB Completed	WB

### F- VALIDATION

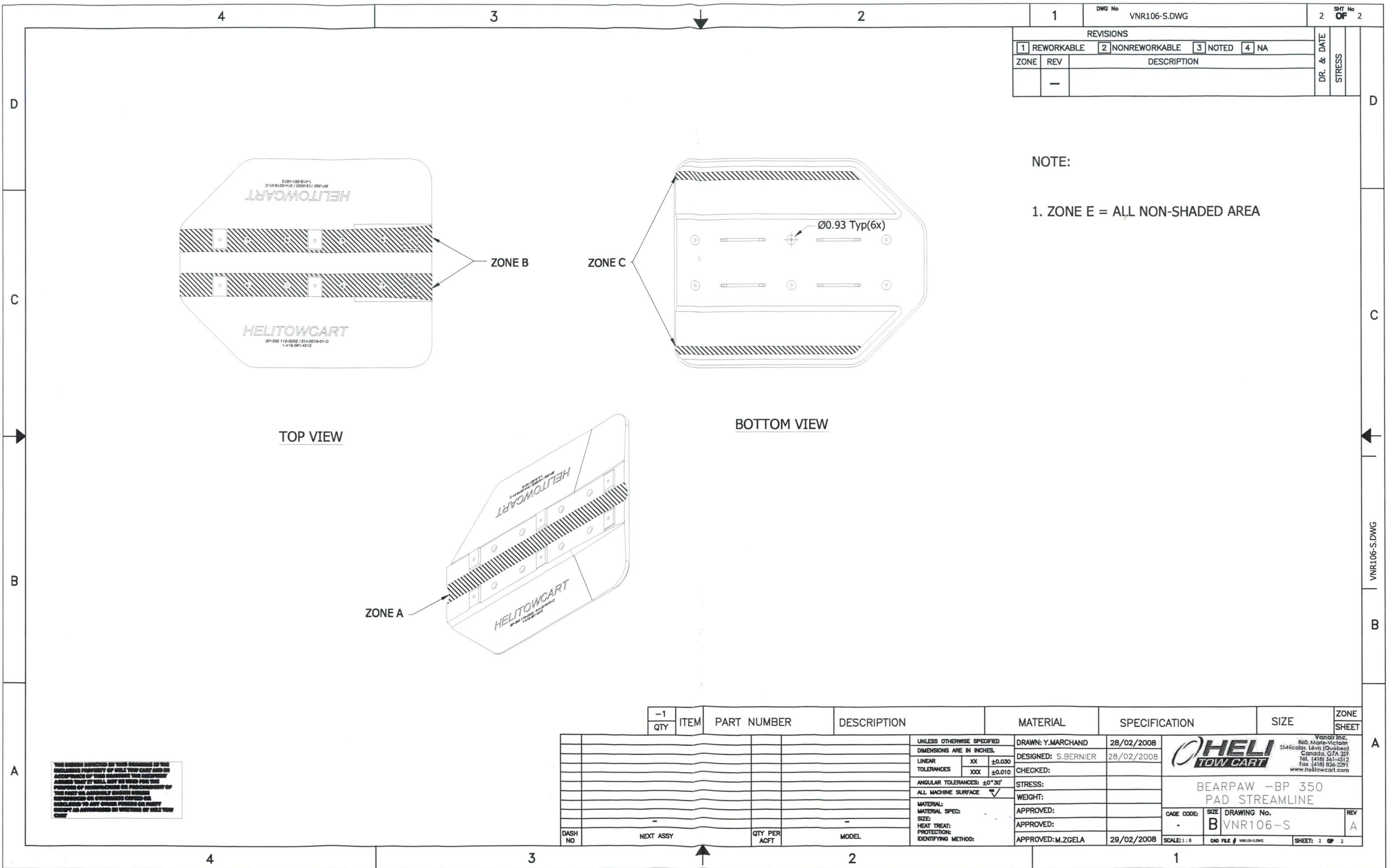
Validated Elements :	By/ date :
Product now meets	
original request/need:	08.03.14
Prod do not stay on as per	DB
is streamlined. OK	

### G- CLOSURE

I confirm that the designated change has been performed successfully :
Signature : <u>N. Bana</u> /date : <u>2008.03.14</u>







REVISIONS		
1	REWORKABLE	2 NONREWORKABLE 3 NOTED 4 NA
ZONE	REV	DESCRIPTION
	—	

DR. & DATE	
STRESS	



14	9	262-0001-17-A	NUT MS20365-428			1/4-28	XXXX
20	8	263-0001-17-A	WASHER AN960-416			1/4	XXXX
6	7	261-0001-17-A	BOLT AN4-14A			1/4-28 UNF	XXXX
4	6	314-0005-15-A	ICEBLADE ASSEMBLY				XXXX
6	5	314-0012-01-A	FILLER BLOCK			1/4"	XXXX
6	4	314-0007-15-B	SLOTTED CLIP SUPPORT				XXXX
3	3	314-0021-01-A	SHRINK			1" x 6 1/4"	XXXX
3	2	314-0019-15-A	U SHAPED CLIP				XXXX
1	1	314-0018-01-S-A	PAD STREAMLINE	POLYETHYLENE UHMW	BLACK	1"	XXXX
-1							XXXX
QTY	ITEM	PART NUMBER	DESCRIPTION	MATERIAL	SPECIFICATION	SIZE	ZONE SHEET

THE DRIVERS EXPECTED IN THIS DRAGGING IN THE EXCLUSIVE PROPERTY OF HILL TOW CART AND IN ACCORDANCE OF THE DRAGGING THE INCIDENT ARISING THAT IT WILL NOT BE USED FOR THE PURPOSE OF MANUFACTURE OR PROCESSING OF THE PARTY COLLECTIVELY SHOWN HEREIN REPRODUCED OR OTHERWISE COPIED OR DISCLOSED TO ANY OTHER PERSON OR PARTY EXCEPT AS AUTHORIZED IN WRITING BY HILL TOW CART

[illegible]

**HELIX**  
**TOW CART**

BEARPAW -BP 350  
ASSEMBLY

CAGE CODE:	SIZE	DRAWING No.
	B	112-0002-00-S
SCALE: 1:4	CAD FILE # 112-0002-00-S.DWG	SHEET: 1 OF 1

## STREAMLINE



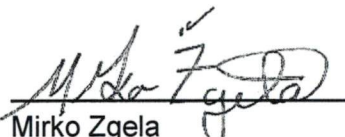
## Master Document List

Helitowcart

### Eurocopter Model AS 350/355 Series Helicopters Installation of BearPaw Model **BP350**

Report: HTC-MDL-BP-AS350/355-1000 (Rev **B**)

APPROVED BY:

  
Mirko Zgela

DATE: JANUARY 29, 2007

Design Approval Representative DAR #310

Revision	Revision Date	Revision of Entry	Entered by
A	Nov 22, 2006	Initial issue	N/A
B	Jan 28, 2007	Revision performed to the Installation Instructions (Doc # HTC-314-0020-00-B).	M.Z.

## 1.0 MASTER DOCUMENTS

Document #	Title	Revision Status	Approval by	Date
AAC-CPL-BP-AS350/355-1000	Compliance Plan – Eurocopter Model AS350/355 Series Helicopters – Installation of BearPaw Model BP350	NC	DAR 310	Nov 22, 2006
HTC-314-0020-00-B	BearPaw Model BP350 – Installation Instructions – AS350/355 Series Helicopters	B	DAR 310	Jan 29, 2007
AAC-STR-BP-AS350/355-1000	Structural Substantiation – Helitowcart Inc. BearPaw Model BP350	NC	DAR 310	Nov 20, 2006
AAC-FTR-C-GZNC	Simple External Modification – Applicant's Flight Test Plan/Report	NC	DAR 310	Nov 21, 2006

## 2.0 MASTER DRAWINGS

Drawings #	Title	Revision Status	Approval by	Date
112-0002-00	BearPaw BP350 - Assembly	B	DAR 310	Nov 20, 2006
VNR084	BearPaw – Iceblade	R01	DAR 310	Apr 24, 2006
VNR085	BearPaw – Iceblade Threaded Rod	R01	DAR 310	Apr 24, 2006
VNR086	BearPaw – Iceblade Assembly	R01	DAR 310	Apr 24, 2006
VNR106	BearPaw BP350 - Pad	R02	DAR 310	Sept 26, 2006
VNR107	BearPaw BP350 – U Shaped Clip	R01	DAR 310	Sept 29, 2006
VNR089	Bearpaw – Slotted Clip Support	R04	DAR 310	July 31, 2006
VNR099	Filler Block 1/4"	R01	DAR 310	Aug 8, 2006

## 3.0 REFERENCE DOCUMENTS

Document #	Title	Revision Status	Approval by	Date
314-0009-01-A	Ultra High Molecular Weight Polyethylene – Typical Properties	A	N/A	May 24, 2006
314-0008-01-A	Propriétés du UHMW TIVAR	A	N/A	May 24, 2006
314-0017-05-A	Heat Shrink Specifications	A	N/A	Sept 6, 2006



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314-0020-00-B  
**BearPaw Model BP350**  
**Installation Instructions – AS350/355**

## INTRODUCTION

### Scope

This installation instruction describes the step-by-step approach to install and to perform maintenance of the Helitowcart BearPaw Model BP 350 for the AS 350 and AS 355 series helicopters.

### General

The Helitowcart BearPaw is made of machined UHMW TIVAR® polymer sheet. This material combines high-impact performance, low friction and good resistance to chemical. Its high durability will provide superior performance when installed on your helicopter. Any question regarding the Helitowcart BearPaw system shall be directed to Helitowcart Customer Support as indicated in Table (1):

**Table 1 – Helitowcart Customer Support**

Care of	Mailing Address	Phone, Fax & Email:
Customer Support Helitowcart BearPaw Helitowcart (Vanair inc)	860 Marie-Victorin St-Nicholas, Levis, Quebec, Canada, G7A 3S9	Tel:1 (418) 561-4512 Fax:1 (418) 836-2291 <a href="mailto:info@helitowcart.com">info@helitowcart.com</a>

### Helicopter Effectivity

This installation instruction applies to the following helicopter models:

**Table 2 – Helicopter Model Effectivity**

Make	Model	Transport Canada Type Certificate Data Sheet
Eurocopter	AS 350 D	H-83
Eurocopter	AS 350 D1	
Eurocopter	AS 350 B	
Eurocopter	AS 350 B1	
Eurocopter	AS 350 B2	
Eurocopter	AS 350 B3	
Eurocopter	AS 350 BA	
Eurocopter	AS 355 E	H-87
Eurocopter	AS 355 F	
Eurocopter	AS 355 F1	
Eurocopter	AS 355 F2	
Eurocopter	AS 355 N	



### Installer Responsibilities

The installer shall ensure that the installation of the Helitowcart BearPaw does not conflict with any other part of the helicopter configuration. Technicians performing this installation should be familiar with A/C work and should have been familiarized with the different Helitowcart BearPaw system components prior to performing a first time installation. All steps in this procedure must be followed. Deviations from the procedures may result in potential structural failure or equipment malfunction and will result in a non-compliant installation.

## INSTALLATION

### BearPaw Installation

#### Reference Documentation:

- [1] Helicopter Maintenance Manual AS 350 or AS 355 as applicable.

#### Step 1: Helicopter Preparation

- Ensure the helicopter is safe for maintenance;
- Lift the helicopter using the manufacturer recommended practice provided in Ref [1] as applicable to your helicopter model to allow a ground clearance of the skid in the area of the aft cross tube of approximately 1 ½" (38mm);

**Note:** The BearPaw Model BP350 can be installed with or without the skid tube wear shoes.

#### Step 2: IceBlade Installation

**Note:** The BearPaw Model BP350 can be installed with or without the IceBlades

- With IceBlade Option
- Install ice blades (Qty: 4) (Iceblades P/N 314-0005-15) under BearPaw pad as per drawing (112-0002-00) provided at Annex A.
- Secure ice blades with washer (Washer P/N 263-0001-17) and nut (P/N 262-0001-17).

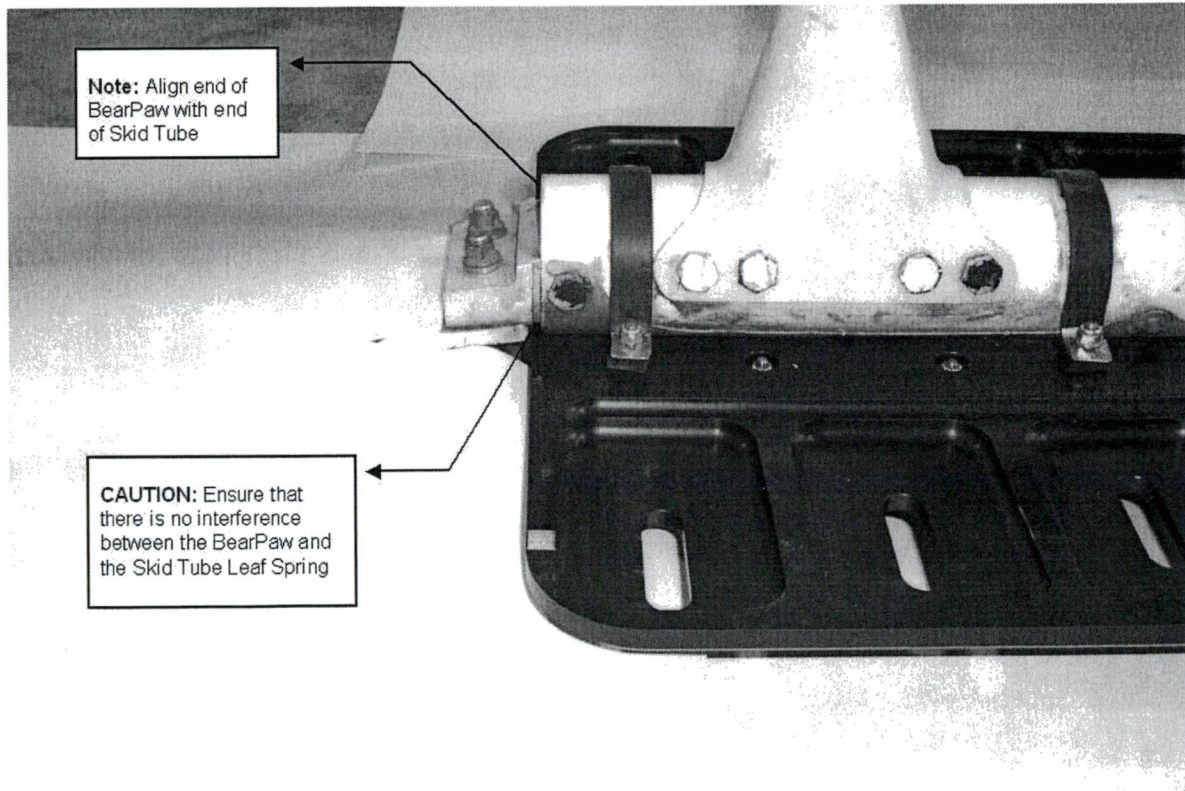
#### Step 3: BearPaw Installation

- Position the BearPaw under the skid as shown in Figure 1 with narrow edge pointing forward.
- Insert washers (P/N 263-0001-17) through all six bolts: 6x(261-0001-17);
- Insert bolts (P/N 261-0001-17) and washer (Washer P/N 263-0001-17) through BearPaw pad as per drawing (112-0002-00) provided at Annex A;
- Insert filler blocks (P/N314-0012-01) as per drawing (112-0002-00) provided at Annex A;

**Note:** The use of filler blocks (P/N314-0012-01) may be replaced or complemented by the use of washers (P/N 263-0001-17) to fill in the gap. Bolts (P/N 261-0001-17) may be replaced by longer or shorter AN4 bolts as required.

- Insert both U-shaped clips (P/N 314-0019-15) through bolts: 6x(261-0001-17);
- Insert slotted clip supports (P/N 314-0007-15) through all six bolts. Position slotted clip supports with rounded edge toward helicopter skid;
- Insert washer (P/N 263-0001-17) & screw nuts (P/N 262-0001-17) for a tight fit. Max. torque on nuts 60 in.-lb;
- Remove helicopter from lift;
- Amend Weight & Balance records as required using data provided in Table 3.

**Figure 1 – BearPaw Model BP350 – Alignment on Skid**





### BearPaw Removal

#### Step 1: Helicopter Preparation

- Ensure the helicopter is safe for maintenance;
- Lift the helicopter using the manufacturer recommended practice provided in Ref [1] to allow a clearance of the skid in the area of the aft cross tube of approximately 1 ½" (38mm);

#### Step 2: BearPaw Removal

- Remove nuts (P/N 262-0001-17), slotted clip support (P/N 314-0007-15) on U-shaped clips (P/N 314-0019-15),
- Remove washers (P/N 263-0001-17), U-shaped clips (P/N 314-0019-15), filler blocks (P/N 314-0012-01), and remove BearPaw pad (P/N 314-0018-01);
- Inspect skid tubes to confirm serviceability
- If the skid tube shoes have been removed, re-install shoes as per reference [1];
- Complete installation by putting helicopter back to normal position by removing lift status;
- Amend Weight & Balance records as required using data provided in Table 3.

### Weight & Balance

The following information should be used to amend the helicopter weight and balance information following the installation or removal:

**Table 3 – Weight & Balance Data**

Item	Weight	Lateral		Longitudinal	
		Arm	Moment	Arm	Moment
Helitowcart BearPaw Model BP350	19,9 Lb 9,0 Kg	N/A	N/A	182,0 in. 462,2 cm	3621,8 in-lb 41,6 m-kG

Note: Weight and moment provided are for full kit installation.

### Parts Lists

The Helitowcart BearPaw detailed parts list is as follow:

**Table 4 – Parts List**

Description	Qty	Part No.	Drawing no./name
<b>BearPaw Model BP350</b>	<b>1</b>	<b>112-0002-00</b>	<b>VNR(112-0002-00) / BearPaw Assembly</b>
BearPaw pad	1	314-0018-01	VNR106 / BearPaw BP350 - Pad
U Shaped Clips	3	314-0019-15	VNR107 / BearPaw BP350 - U Shaped Clips
Slotted Clip Support	6	314-0007-15	VNR089 / BearPaw - Slotted Clip Support
Filler blocks 1/4"	6	314-0012-01	VNR099 / BearPaw – Filler block ¼"
Bolts	6	261-0001-17	Bolt- AN4-14
Nuts	6	262-0001-17	Nut- MS20365-428
Washers	12	263-0001-17	Washer – AN960-416
Shrink	3	314-0021-01	BearPaw – Shrink Specifications & Install.(1"x6.25")
<b>IceBlade Option Model OIB</b>	<b>4</b>	<b>314-0005-15</b>	<b>VNR086 / IceBlade Assembly</b>
Nuts	8	262-0001-17	Nut- MS20365-428
Washers	8	263-0001-17	Washer – AN960-416

## INSPECTION

### Life Limited Items

Three are no life limited items for the Helitowcart BearPaw.

### Pre-Flight

Before each flight the following items should be inspected:

- Check that attachment bolts are installed and secured,
- Check that BearPaws are free from visible damage,
- If damage is found, verify allowable damage according to:  
 Table 5 – Tolerances for cracks & wear and  
 Annex B – BearPaw Allowable Damage Drawing (VNR106 page 2 of 2)

### Periodic Inspection Schedule

- The Helitowcart BearPaw shall be inspected every 500 flying hours or yearly whichever comes first.
- The Helitowcart BearPaw can be inspected concurrently with the helicopter landing gear inspection.
- Recommended tolerance for performance of inspection is +/- 10% of the 500 hours period.
- Following an inspection, subsequent interval shall be adjusted to meet the original schedule from time of inspection. If inspection is performed earlier than the 10% tolerance, then following inspections shall be scheduled not to exceed the above mentioned tolerance.

### 500 Hour or Yearly Inspection Details

- Remove Helitowcart BearPaw: See Section "BearPaw Removal",
- Inspect all parts for damage & wear. See table & figure below for allowable damage,
- Replace all damaged parts,
- Replace parts worn beyond the tolerances indicated below.
- See Tolerances for cracks & wear:  
 Table 5 – Tolerances for cracks & wear, &  
 Annex B – BearPaw Allowable Damage Drawing (VNR106 page 2 of 2)

**Table 5 – Tolerances for Cracks & Wear**

Zone	Nominal Dimension (Inches)	Allowable Damage/Wear (Inches)	Cracks
A	0,50	0,050	
B	1,000	0,250	
C	0,375	0,075	<u>Pockets:</u> Cracks are acceptable in the Helitowcart BearPaw pocket areas to a maximum length of 0,5" provided they are 0,25" away from the stiffener radius change. Stop drill cracks with a 0,125" hole.
D	0,50	None	<u>Stiffeners:</u> NO cracks in stiffeners.

### Overhaul Requirements


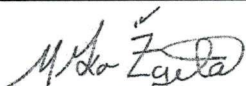
- Not applicable for the designated application of this device.



**REVISIONS & APPROVAL****Revisions**

Date	Rev	Nature of Revisions
Nov 20,2006	A	Initial issue
Jan 29, 2007	B	Minor editorials. Change to weight & Balance Data to reflect production model. Change in inspection schedule from 300 to 500 hours to match existing landing gear periodicity.

**Approval**

Internal Approval :		
Helitowcart inc.	 Lucien Barbeau, President	Jan 29, 2007 Date:
External Approval :		
Transport Canada	 Mirko Zgela, DAR #310	Jan 29, 2007 Date:

**Annex A**

See: BearPaw Assembly, drawing no. (112-0002-00)

**Annex B**

See: BearPaw Pad, drawing no. VNR106. Page 2 of 2.



314-0020-00-B  
BearPaw Model BP350  
Installation Instructions – AS350/355

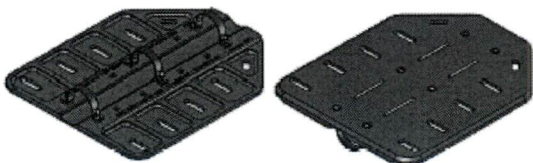
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#### **Annex A**

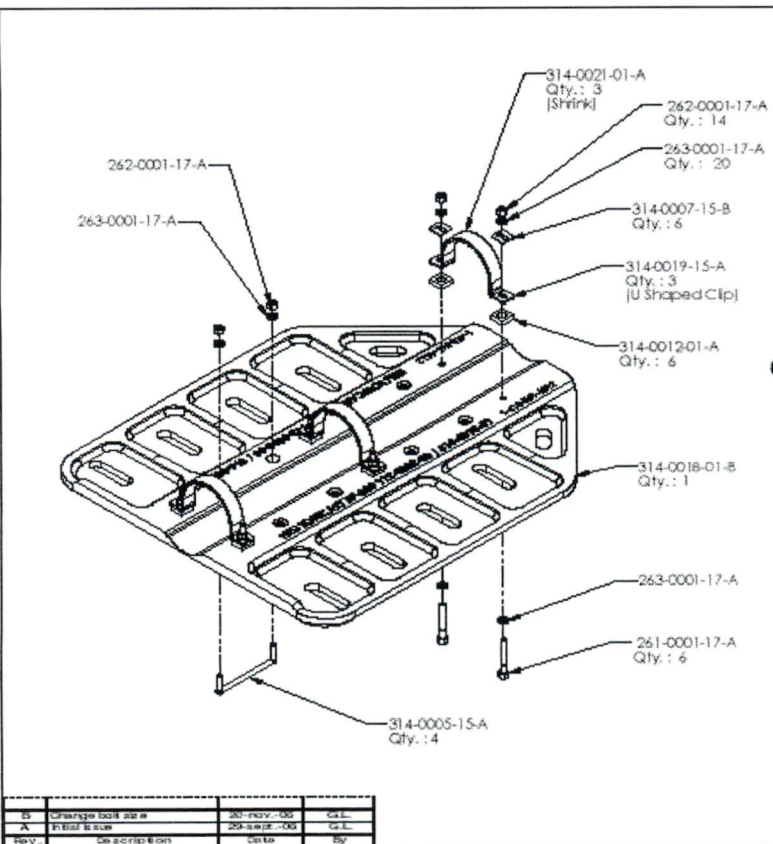
BearPaw Assembly, Drawing no. VNR(112-0002-00).  
P/N 112-0002-00-B



No.	Qty.	Description	Part #	Rev #
1	1	Beapaw BP-350 - Pad	314-0018-01	B
2	3	Beapaw BP-350 - U shaped clip	314-0019-15	A
3	3	Beapaw BP-350 - Shrink 1" x 6 1/4"	314-0021-01	A
4	6	Beapaw - Slatted clip support	314-0027-15	B
5	6	Beapaw - Filter Block 1/4"	314-0012-01	A
6	4	Beapaw - Iceblade Assembly	314-0005-15	A
7	6	Bolt AN4-14A	261-0001-17	A
8	20	Washer AN960-416	263-0001-17	A
9	14	Nut MS20365-428	262-0001-17	A



Note : Iceblade assembly can be omitted from installation (Optional)



S	Change bolt size	20-nov.-05	G.L.
A	Initial issue	29-sept.-05	G.L.
Rev.	Description	Date	By

	<b>Vander Inc.</b> 800, Boulevard St-Hubert Laval, Québec H7V 1A2 Tel: 514 333-2222 Fax: 514 333-2222 <a href="http://www.vander.com">www.vander.com</a>		800 367-4469 / 514 333-2222 514 333-2222 514 333-2222 514 333-2222 514 333-2222 514 333-2222	
	<b>Scarpow 89-350 - Assembly</b>		112-0002-00	
112-0002-00	112-0002-00	112-0002-00	112-0002-00	112-0002-00



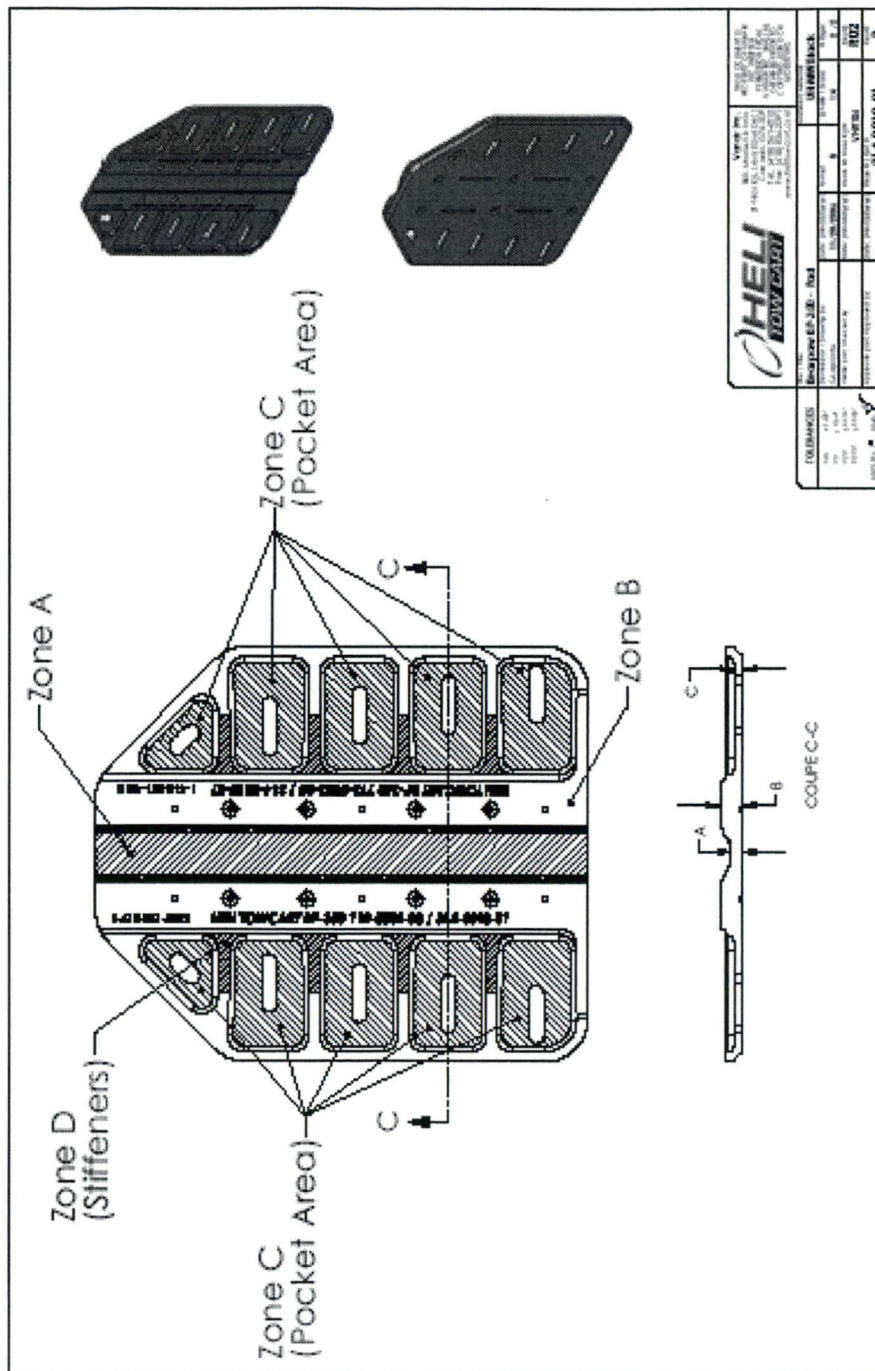
314-0020-00-B  
**BearPaw Model BP350**  
**Installation Instructions – AS350/355**

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**Annex B**

BearPaw Pad, Drawing no. VNR106. Page 2 of 2.  
P/N 314-0018-01-B





FAX TRANSMISSION

Date: 2008-03-03

Pages: 12

To: MIRKO ZGELA

Fax: 819-377-7928

From: NATHALIE BARBEAU

Object: REVISION DE DOCUMENTS

ALLO MIRKO,  
VOIR CI-JOINT NOTES DE REVUE.  
JE TE FAXE SEULEMENT PAGES ANNOTÉES.

SALUTATIONS

Nathalie



## INTRODUCTION

### Scope

This installation instruction describes the step-by-step approach to install and to perform maintenance of the Helitowcart BearPaw Model BP 350 (P/N 112-0002-00 or P/N 112-0002-00-S) for the AS 350 and AS 355 series helicopters.

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### General

The Helitowcart BearPaw is made of machined UHMW TIVAR® polymer sheet. This material combines high-impact performance, low friction and good resistance to chemical. Its high durability will provide superior performance when installed on your helicopter. Any question regarding the Helitowcart BearPaw system shall be directed to Helitowcart Customer Support as indicated in Table (1):

**Table 1 – Helitowcart Customer Support**

Care of	Mailing Address	Phone, Fax & Email:
Customer Support Helitowcart BearPaw Helitowcart (Vanair inc)	860 Marie-Victorin St-Nicholas, Levis, Quebec, Canada, G7A 3S9	Tel:1 (418) 561-4512 Fax:1 (418) 836-2291 <a href="mailto:info@helitowcart.com">info@helitowcart.com</a>

### Helicopter Effectivity

This installation instruction applies to the following helicopter models:

**Table 2 – Helicopter Model Effectivity**

Make	Model	Transport Canada Type Certificate Data Sheet
Eurocopter	AS 350 D	H-83
Eurocopter	AS 350 D1	
Eurocopter	AS 350 B	
Eurocopter	AS 350 B1	
Eurocopter	AS 350 B2	
Eurocopter	AS 350 B3	
Eurocopter	AS 350 BA	
Eurocopter	AS 355 E	H-87
Eurocopter	AS 355 F	
Eurocopter	AS 355 F1	
Eurocopter	AS 355 F2	

Eurocopter	AS 355 N	
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### Installer Responsibilities

The installer shall ensure that the installation of the Helitowcart BearPaw does not conflict with any other part of the helicopter configuration. Technicians performing this installation should be familiar with A/C work and should have been familiarized with the different Helitowcart BearPaw system components prior to performing a first time installation. All steps in this procedure must be followed. Deviations from the procedures may result in potential structural failure or equipment malfunction and will result in a non-compliant installation.

## INSTALLATION

### BearPaw Installation

#### Reference Documentation:

[1] Helicopter Maintenance Manual AS 350 or AS 355 as applicable.

#### Step 1: Helicopter Preparation

- Ensure the helicopter is safe for maintenance;
- Lift the helicopter using the manufacturer recommended practice provided in Ref [1] as applicable to your helicopter model to allow a ground clearance of the skid in the area of the aft cross tube of approximately 1 ½" (38mm);

**Note:** The BearPaw Model BP350 (P/N 112-0002-00 or P/N 112-0002-00-S) can be installed with or without the skid tube wear shoes.

#### Step 2: IceBlade Installation

**Note:** The BearPaw Model BP350 (P/N 112-0002-00 or P/N 112-0002-00-S) can be installed with or without the IceBlades

- With IceBlade Option
- Install ice blades (Qty: 4) (Iceblades P/N 314-0005-15) under BearPaw pad as per drawing (112-0002-00 or 112-0002-00-S) provided at Annex A.
- Secure ice blades with washer (Washer P/N 263-0001-17) and nut (P/N 262-0001-17).

#### Step 3: BearPaw Installation

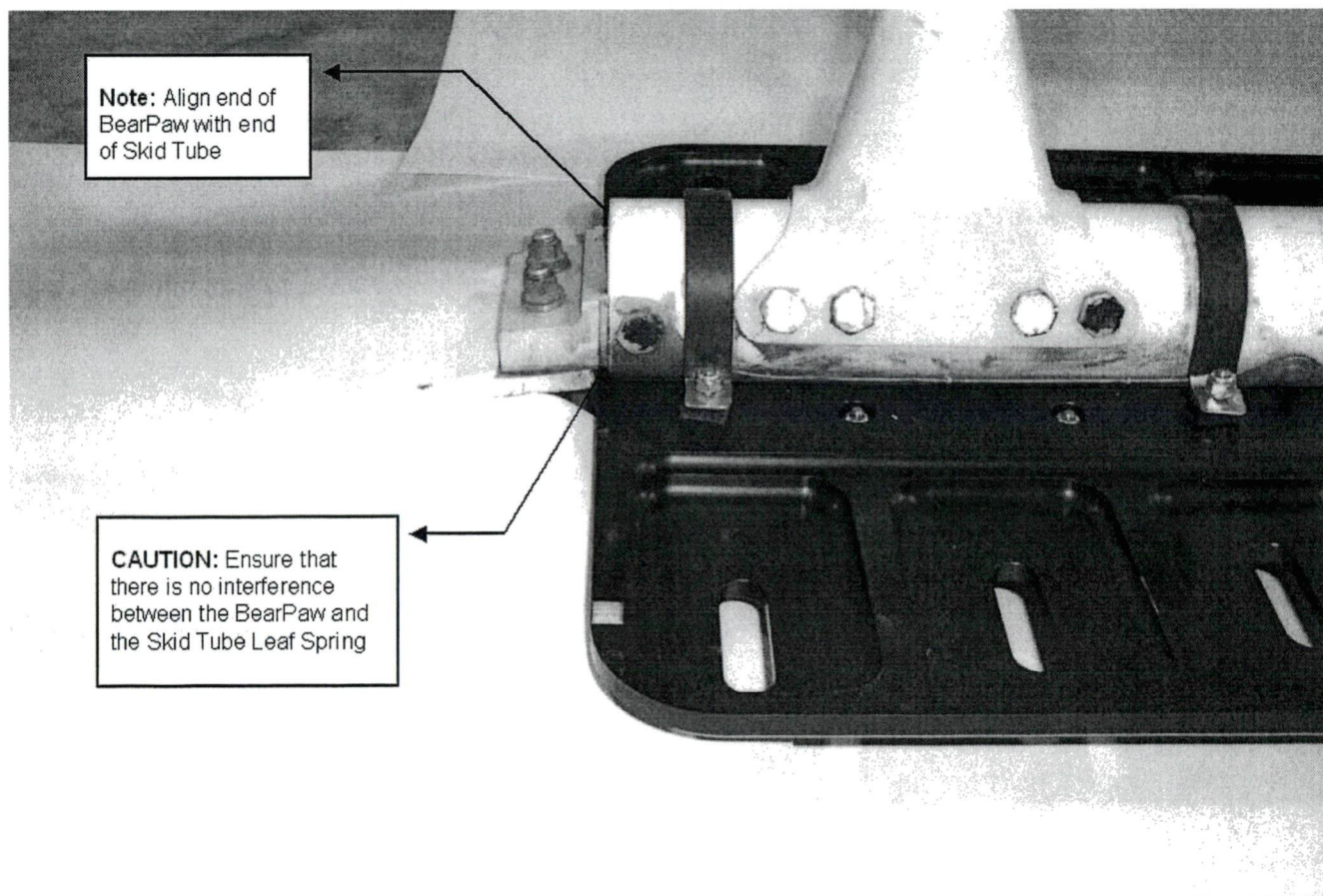
- Position the BearPaw under the skid as shown in Figure 1 with narrow edge pointing forward.
- Insert washers (P/N 263-0001-17) through all six bolts: 6x(261-0001-17);
- Insert bolts (P/N 261-0001-17) and washer (Washer P/N 263-0001-17) through BearPaw pad as per drawing (112-0002-00 or 112-0002-00-S) provided at Annex A;
- Insert filler blocks (P/N 314-0012-01) as per drawing (112-0002-00 or 112-0002-00-S) provided at Annex A;



**Note:** The use of filler blocks (P/N314-0012-01) may be replaced or complemented by the use of washers (P/N 263-0001-17) to fill in the gap. Bolts (P/N 261-0001-17) may be replaced by longer or shorter AN4 bolts as required.

- Insert both U-shaped clips (P/N 314-0019-15) through bolts: 6x(261-0001-17);
- Insert slotted clip supports (P/N 314-0007-15) through all six bolts. Position slotted clip supports with rounded edge toward helicopter skid;
- Insert washer (P/N 263-0001-17) & screw nuts (P/N 262-0001-17) for a tight fit. Max. torque on nuts 60 in.-lb;
- Remove helicopter from lift;
- Amend Weight & Balance records as required using data provided in Table 3.

**Figure 1 – BearPaw Model BP350 (P/N 112-0002-00 or P/N 11-0002-00-S) - Alignment on Skid**



### BearPaw Removal

#### Step 1: Helicopter Preparation

- Ensure the helicopter is safe for maintenance;
- Lift the helicopter using the manufacturer recommended practice provided in Ref [1] to allow a clearance of the skid in the area of the aft cross tube of approximately 1 ½" (38mm);

#### Step 2: BearPaw Removal

- Remove nuts (P/N 262-0001-17), slotted clip support (P/N 314-0007-15) on U-shaped clips (P/N 314-0019-15),
- Remove washers (P/N 263-0001-17), U-shaped clips (P/N 314-0019-15), filler blocks (P/N 314-0012-01), and remove BearPaw pad (P/N 314-0018-01);
- Inspect skid tubes to confirm serviceability
- If the skid tube shoes have been removed, re-install shoes as per reference [1];
- Complete installation by putting helicopter back to normal position by removing lift status;
- Amend Weight & Balance records as required using data provided in Table 3.

### Weight & Balance

The following information should be used to amend the helicopter weight and balance information following the installation or removal:

**Table 3 – Weight & Balance Data**

Item	Weight	Lateral		Longitudinal	
		Arm	Moment	Arm	Moment
Helitowcart BearPaw Model BP350 (P/N 112-0002-00)	19,9 Lb 9,0 Kg	N/A	N/A	182,0 in. 462,2 cm	3621,8 in-lb 41,6 m-kG
Helitowcart BearPaw Model BP350 - Streamline (P/N 112-0002-00-S)	18,3 Lb 8,5 Kg	N/A	N/A	182,0 in. 462,2 cm	3330,6 in-lb 39,3 m-kG

Note: Weight and moment provided are for full kit installation.

### Parts Lists

The Helitowcart BearPaw detailed parts list is as follow:

**Table 4 – Parts List**

Description	Qty	Part No.	Drawing no./name
<b>BearPaw Model BP350</b>	<b>1</b>	<b>112-0002-00</b>	<b>VNR(112-0002-00) / BearPaw Assembly</b> <b>VNR (112-0002-00-S) /Bear Paw Streamline Assembly</b>
BearPaw pad <sup>(1)</sup>	1	314-0018-01	VNR106 / BearPaw BP350 – Pad
BearPaw pad streamline <sup>(1)</sup>	1	314-0018-01S	VNR106S / BearPaw BP350 – Pad Streamline
U Shaped Clips	3	314-0019-15	VNR107 / BearPaw BP350 - U Shaped Clips
Slotted Clip Support	6	314-0007-15	VNR089 / BearPaw - Slotted Clip Support



Filler blocks 1/4"	6	314-0012-01	VNR099 / BearPaw – Filler block 1/4"
Bolts	6	261-0001-17	Bolt- AN4-14
Nuts	6	262-0001-17	Nut- MS20365-428
Washers	12	263-0001-17	Washer – AN960-416
Shrink	3	314-0021-01	BearPaw – Shrink Specifications & Install. (1"x6.25")
<b>IceBlade Option Model OIB</b>	<b>4</b>	<b>314-0005-15</b>	<b>VNR086 / IceBlade Assembly</b>
Nuts	8	262-0001-17	Nut- MS20365-428
Washers	8	263-0001-17	Washer – AN960-416

Note (1): Use BearPaw Pad P/N 314-0018-01 for VNR P/N 112-0002-00 and BearPaw Pad P/N 314-0018-01-S for VNR P/N 112-0002-00-S as applicable.

## INSPECTION

### Life Limited Items

Three are no life limited items for the Helitowcart BearPaw.

### Pre-Flight

Before each flight the following items should be inspected:

- Check that attachment bolts are installed and secured,
- Check that BearPaws are free from visible damage,
- If damage is found, verify allowable damage according to:  
 Table 5 – Tolerances for cracks & wear and  
 Annex B – BearPaw Allowable Damage Drawing (VNR106 page 2 of 2 or **VNR 106S** page 2 of 2)

### Periodic Inspection Schedule

- The Helitowcart BearPaw shall be inspected every 500 flying hours or yearly whichever comes first.
- The Helitowcart BearPaw can be inspected concurrently with the helicopter landing gear inspection.
- Recommended tolerance for performance of inspection is +/- 10% of the 500 hours period.
- Following an inspection, subsequent interval shall be adjusted to meet the original schedule from time of inspection. If inspection is performed earlier than the 10% tolerance, then following inspections shall be scheduled not to exceed the above mentioned tolerance.

### 500 Hour or Yearly Inspection Details

- Remove Helitowcart BearPaw: See Section "BearPaw Removal",
- Inspect all parts for damage & wear. See table & figure below for allowable damage,
- Replace all damaged parts,
- Replace parts worn beyond the tolerances indicated below.
- See Tolerances for cracks & wear:  
 Table 5 – Tolerances for cracks & wear, &  
 Annex B – BearPaw Allowable Damage Drawing (VNR106 page 2 of 2 or **VNR 106S** page 2 of 2)

**Table 5 – Tolerances for Cracks & Wear**

Zone	Nominal Dimension (Inches)	Allowable Damage/Wear (Inches)	Cracks
A	0,50	0,050	
B	1,000	0,250	



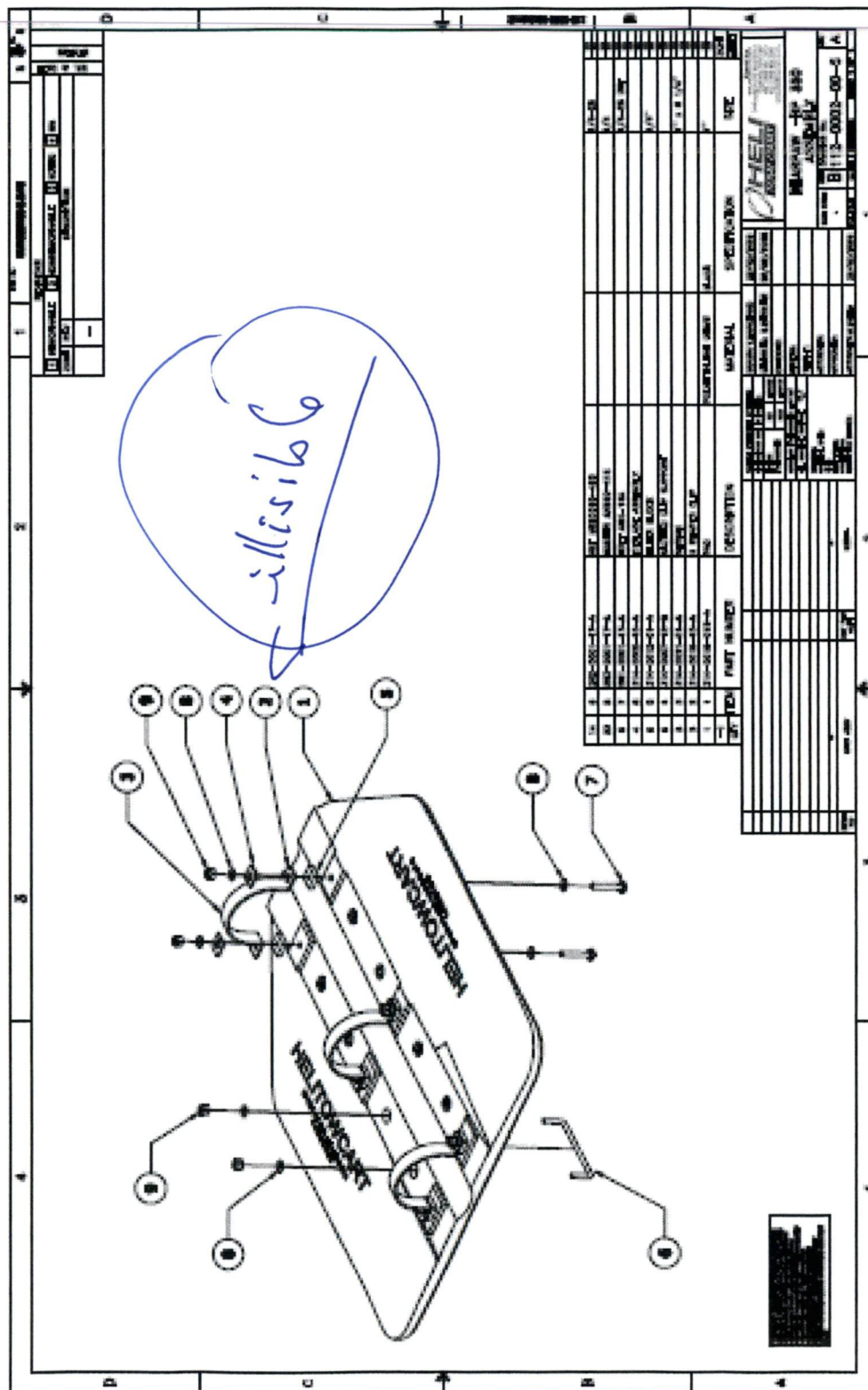
**Annex A**

See: BearPaw Assembly, drawing no. (112-0002-00) or;  
BearPaw Assembly, drawing no. (112-0002-00-S)

**Annex B**

~~See~~ See: BearPaw Pad, drawing no. VNR106. Page 2 of 2 or;  
BearPaw Pad, drawing no. VNR106. Page 2 of 2.

-S



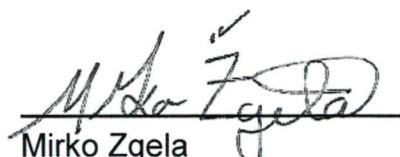
## Master Document List

Helitowcart

### Eurocopter Model AS 350/355 Series Helicopters Installation of BearPaw Model BP350

Report: HTC-MDL-BP-AS350/355-1000 (Rev C)

APPROVED BY:

  
Mirko Zgela


DATE: FEBRUARY 28, 2008

Design Approval Representative DAR #310

Revision	Revision Date	Revision of Entry	Entered by
A	Nov 22, 2006	Initial issue	N/A
B	Jan 28, 2007	Revision performed to the Installation Instructions (Doc # HTC-314-0020-00-B).	M.Z.
C	Feb 28, 2007	Addition of streamline pad configuration.	M.Z.



## 1.0 MASTER DOCUMENTS

Document #	Title	Revision Status	Approval by	Date
AAC-CPL-BP-AS350/355-1000	Compliance Plan – Eurocopter Model AS350/355 Series Helicopters – Installation of BearPaw Model BP350	NC	DAR 310	Nov 22, 2006
HTC-314-0020-00-B 	BearPaw Model BP350 – Installation Instructions – AS350/355 Series Helicopters	C	DAR 310	Feb 28, 2008
AAC-STR-BP-AS350/355-1000	Structural Substantiation – Helitowcart Inc. BearPaw Model BP350	NC	DAR 310	Nov 20, 2006
AAC-FTR-C-GZNC	Simple External Modification – Applicant's Flight Test Plan/Report	NC	DAR 310	Nov 21, 2006

## 2.0 MASTER DRAWINGS

Drawings #	Title	Revision Status	Approval by	Date
112-0002-00	BearPaw BP350 - Assembly	B	DAR 310	Nov 20, 2006
112-0002-00-S	BearPaw BP350 – Assembly Streamline	A	DAR 310	Feb 28, 2008
VNR084	BearPaw – Iceblade	R01	DAR 310	Apr 24, 2006
VNR085	BearPaw – Iceblade Threaded Rod	R01	DAR 310	Apr 24, 2006
VNR086	BearPaw – Iceblade Assembly	R01	DAR 310	Apr 24, 2006
VNR106	BearPaw BP350 - Pad	R02	DAR 310	Sept 26, 2006
VNR106-S	BearPaw BP350 – Pad Streamline	R01	DAR 310	Feb 28, 2008
VNR107	BearPaw BP350 – U Shaped Clip	R01	DAR 310	Sept 29, 2006
VNR089	Bearpaw – Slotted Clip Support	R04	DAR 310	July 31, 2006
VNR099	Filler Block 1/4"	R01	DAR 310	Aug 8, 2006

## 3.0 REFERENCE DOCUMENTS

Document #	Title	Revision Status	Approval by	Date
314-0009-01-A	Ultra High Molecular Weight Polyethylene – Typical Properties	A	N/A	May 24, 2006
314-0008-01-A	Propriétés du UHMW TIVAR	A	N/A	May 24, 2006
314-0017-05-A	Heat Shrink Specifications	A	N/A	Sept 6, 2006

